

AMENDMENTS TO THE CLAIMS:

Please cancel Claims 54 through 57 without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1 through 4, 13 through 24, 27, and 43 through 53 and add Claims 58 through 60 as follows:

1. (Currently Amended) ~~An apparatus~~ A device for use in a system comprising said device, a first apparatus, and a second apparatus, said device comprising:

a selective spoofing unit that (a) obtains, from a transport level connection between the first apparatus and the second apparatus, a transport level packet sent by the first apparatus to the second apparatus, (b) determines, in accordance with a value in a field of the transport level packet, what application is using a the transport level connection, and (b) (c) decides whether or not to perform transport level spoofing on the transport level connection, in accordance with the determination of what application is using the transport level connection, (d) selectively performs transport level spoofing on the transport level connection in accordance with the decision of whether or not to perform transport level spoofing, wherein the transport level spoofing comprises (i) locally acknowledging, to the first apparatus, receipt of the transport level packet and (ii) taking on, from the first apparatus, the responsibility of retransmitting the transport level packet if necessary, (e) decides, in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, whether

or not to modify the transport level packet, in accordance with the determination of what application is using the transport level connection, (f) selectively modifies the transport level packet in accordance with the decision of whether or not to modify the transport level packet, and (g) sends the transport level packet, having been modified if such is decided, to the second apparatus,

~~wherein the transport level spoofing comprises sending a transport level ACK to spoof receipt of data, and~~

wherein at least one of the following conditions is satisfied:

~~(1) in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a TCP Option, TCP Maximum Segment Size_i, is set in accordance with the determination of what application is using the transport level connection;~~

~~(2) in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a three-way handshake parameter field, is set in accordance with the determination of what application is using the transport level connection; and~~

~~(3) in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a connection priority~~

~~field is set in accordance with the determination of what application is using the transport level connection.~~

2. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said selective spoofing unit only spoofs connections associated with high throughput applications.

3. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said selective spoofing unit assigns spoofing resources, including buffer space and control blocks, to the spoofed transport level connection.

4. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said selective spoofing unit determines what application is using the transport level connection in accordance with a TCP port number field of the transport level packet.

5 - 12. (Cancelled)

13. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein the transport level connection uses one of the Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP).

14. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is connected to another apparatus via a backbone connection.

15. (Currently Amended) The ~~apparatus~~ device of claim 14, wherein the backbone connection is via a wireless link.

16. (Currently Amended) The ~~apparatus~~ device of claim 15, wherein the wireless link has high latency and high error rate.

17. (Currently Amended) The ~~apparatus~~ device of claim 15, wherein the wireless link is a satellite link.

18. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a network gateway.

19. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a host.

20. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a hub.

21. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a switch.

22. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a VSAT.

23. (Currently Amended) The ~~apparatus~~ device of claim 1, wherein said apparatus is a component of a router.

24. (Currently Amended) A method comprising:
obtaining, from a transport level connection between a first apparatus and a second apparatus, a transport level packet sent by the first apparatus to the second apparatus;
determining, in accordance with a value in a field of the transport level packet, what application is using the transport level connection;
deciding, in accordance with the determination of what application is using the transport level connection, whether or not to perform transport level spoofing on the transport level connection;
selectively performing transport level spoofing on ~~a~~ the transport level connection in accordance with ~~a determination as to what application is using the transport level connection~~ the decision, wherein the transport level spoofing comprises
(a) locally acknowledging, to the first apparatus, receipt of the transport level packet

and (b) taking on, from the first apparatus, the responsibility of retransmitting the transport level packet to the second apparatus if necessary;

determining, in accordance with the determination of what application is using the transport level connection, whether or not to modify the transport level packet before forwarding the same to the second apparatus;

selectively modifying the transport level packet in accordance with the determination of whether or not to modify the transport level packet; and

sending the transport level packet, whether modified or not, to the second apparatus,

~~wherein the transport level spoofing comprises sending a transport level ACK to spoof receipt of data, and~~

wherein at least one of the following conditions is satisfied:

~~(1) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection;~~ said selective modifying comprises varying the following field of the transport level packet: a TCP Option, TCP Maximum Segment Size; ~~is set in accordance with the determination as to what application is using the transport level connection;~~

~~(2) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection;~~ said selective modifying comprises varying the following field of the transport level packet: a three-way handshake parameter field; ~~is set in accordance with the determination as to what application is using the transport level connection; and~~

~~(3) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection; said selective modifying comprises varying the following field of the transport level packet: a connection priority field. is set in accordance with the determination as to what application is using the transport level connection.~~

25. (Previously Presented) The method of claim 24, wherein said selective spoofing step only spoofs connections associated with high throughput applications.

26. (Previously Presented) The method of claim 24, wherein said selective spoofing step assigns spoofing resources, including buffer space and control blocks, to the spoofed transport level connection.

27. (Currently Amended) The method of claim 24, wherein said selective spoofing step determines what application is using the transport level connection in accordance with a TCP port number field of the transport level packet.

28 - 35. (Cancelled)

36. (Previously Presented) The method of claim 24, wherein the transport level connection uses one of the Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP).

37. (Original) The method of claim 24, wherein said method is performed in a network gateway.

38. (Original) The method of claim 24, wherein said method is performed in a host.

39. (Original) The method of claim 24, wherein said method is performed in a hub.

40. (Original) The method of claim 24, wherein said method is performed in a switch.

41. (Original) The method of claim 24, wherein said method is performed in a VSAT.

42. (Original) The method of claim 24, wherein said method is performed in a router.

43. (Currently Amended) ~~An apparatus~~ A device for use in a system comprising said device, a first apparatus, and a second apparatus, said device comprising:

a selective spoofing unit that (a) obtains, from a transport level connection between the first apparatus and the second apparatus, a transport level packet sent by the first apparatus to the second apparatus, (b) decides whether or not to perform transport level spoofing on a transport level connection, in accordance with at least one field information in a the transport level packet, received by said apparatus, (c) selectively performs transport level spoofing on the transport level connection in accordance with the decision of whether or not to perform transport level spoofing, wherein the transport level spoofing comprises (i) locally acknowledging, to the first apparatus, receipt of the transport level packet and (ii) taking on, from the first apparatus, the responsibility of retransmitting the transport level packet if necessary, (d) decides, in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, whether or not to modify the transport level packet, in accordance with a field in the transport level packet, (e) selectively modifies the transport level packet in accordance with the decision of whether or not to modify the transport level packet, and (f) sends the transport level packet, having been modified if such is decided, to the second apparatus,

~~wherein the transport level spoofing comprises sending a transport level ACK to spoof receipt of data, and~~

wherein at least one of the following conditions is satisfied:

(1) ~~in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a TCP Option, TCP Maximum Segment Size;~~ is set in accordance with the at least one field;

(2) ~~in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a three-way handshake parameter field;~~ is set in accordance with the at least one field; and

(3) ~~in a case that said selective spoofing unit has decided to perform transport level spoofing on the transport level connection, the selective modification comprises varying the following field of the transport level packet: a connection priority field~~ is set in accordance with the at least one field.

44. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field information~~ comprises a destination network level address field in the transport level packet.

45. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field information~~ comprises a source network level address field in the transport level packet.

46. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises a destination port number field in the transport level packet.

47. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises a source port number field in the transport level packet.

48. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises a transport level options field field in the transport level packet.

49. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises a differentiated services (DS) field in the transport packet.

50. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises a plurality of fields, in the transport level packet, selected from the group consisting a destination IP address, a source IP address, a TCP destination port number, a TCP source port number, a TCP options field, and an IP differentiated services (DS) field.

51. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information comprises an IP address and a TCP port number.

52. (Currently Amended) ~~An apparatus~~ The device according to ~~Claim~~ claim 43, wherein the ~~at least one field~~ information is a TCP field.

53. (Currently Amended) A method comprising:
obtaining, from a transport level connection between a first apparatus and a second apparatus, a transport level packet sent by the first apparatus to the second apparatus;

deciding, in accordance with information in the transport level packet, whether or not to perform transport level spoofing on the transport level connection;

selectively performing transport level spoofing on ~~[[a]]~~ the transport level connection in accordance with ~~at least one field in an IP packet or TCP packet;~~ the decision, wherein the transport level spoofing comprises ~~sending a transport level ACK to spoof receipt of data,~~ and (a) locally acknowledging, to the first apparatus, receipt of the transport level packet and (b) taking on, from the first apparatus, the responsibility of retransmitting the transport level packet to the second apparatus if necessary;

determining, in accordance with a field in the transport level packet, whether or not to modify the transport level packet before forwarding the same to the second apparatus;

selectively modifying the transport level packet in accordance with the determination of whether of not to modify the transport level packet; and sending the transport level packet, whether modified or not, to the second apparatus,

wherein at least one of the following conditions is satisfied:

~~(1) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection,~~ said selective modifying comprises varying the following field of the transport level packet: a TCP Option, TCP Maximum Segment Size; ~~is set in accordance with the at least one field;~~

~~(2) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection,~~ said selective modifying comprises varying the following field of the transport level packet: a three-way handshake parameter field; ~~is set in accordance with the at least one field; and~~

~~(3) in a case that said selective spoofing step has decided to perform transport level spoofing on the transport level connection,~~ said selective modifying comprises varying the following field of the transport level packet: a connection priority ~~is set in accordance with the at least one field.~~

54 - 57. (Cancelled)

58. (New) A device for use in a system comprising said device, a first apparatus, and a second apparatus, said device comprising:

means for obtaining, from a TCP connection between the first apparatus and the second apparatus, a TCP packet sent by the first apparatus to the second apparatus;

first determining means for determining, in accordance with the TCP port number field of the TCP packet, whether or not to perform TCP spoofing;

means for performing TCP spoofing in accordance with the determination by said first determining means, wherein the TCP spoofing comprises (a) locally acknowledging, to the first apparatus, receipt of the transport level packet and (b) taking on, from the first apparatus, the responsibility of retransmitting the transport level packet to the second apparatus if necessary;

second determining means for determining, in accordance with the TCP port number field of the TCP packet, whether or not to vary a field of the TCP packet before forwarding the same to the second apparatus;

means for varying a field of the TCP packet in accordance with the determination by said second determining means, wherein the field is the TCP Option, TCP Maximum Segment Size; and

means for sending the TCP packet, whether varied or not, to the second apparatus.

59. (New) The device according to claim 1, wherein condition (1) is satisfied.

PATENT
Attorney Docket No.: PD-990184A
Customer No.: 29158

60. (New) The device according to claim 1, wherein conditions (1) and (3) are satisfied.